

## The Composition Function

$$(f \circ g)(x) = f(g(x))$$

This is read "f composition g" and means to copy the f function down but where ever you see an x, substitute in the g function.

$$f(x) = 2x^2 + 3 \quad g(x) = 4x^3 + 1$$

$$f \circ g = 2(4x^3 + 1)^2 + 3$$

Given	
$f(x) = 3x + 7$	$g(x) = x^2 - x$
Solve for $[g \circ f](x)$	
First Term	BLOB $g(x) = \bullet^2 - \bullet$
Second Term	PARENTHESIS $f(x) = (3x + 7)$
Now, follow the first term. Copy everything down exactly as you see it, UNTIL you get to a blob. When you see a blob, copy down a parenthesis AND everything inside the parenthesis	
$[g \circ f](x) = (3x + 7)^2 - (3x + 7)$	